

wherein:

R represents a 25-hydroxy side-group of vitamin D₂ or of vitamin D₃;

Y represents hydrogen or hydroxy;

A represents a functional group, coupled via a spacer group, which can be bound by a protein with high affinity;

characterised by the steps;

a) cyanoethylation of the 3-hydroxy group of a vitamin D starting compound in the presence of potassium hydride and tertiary butanol;

b) addition of lithium hydride and conversion of the 25-hydroxy group into the lithium alcoholate and subsequent reduction of the nitrile group with lithium aluminum hydride; and

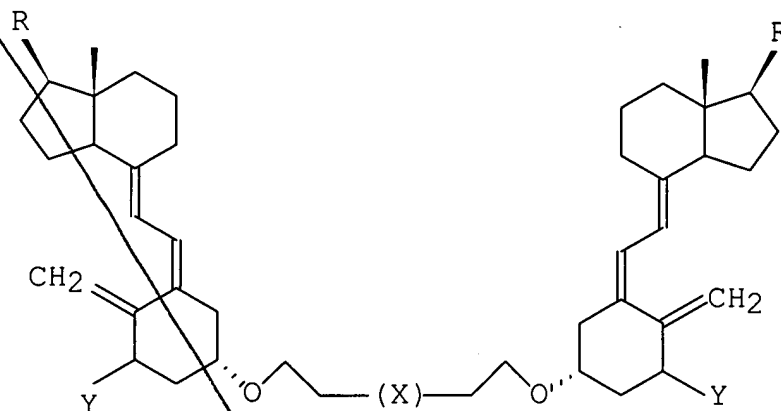
c) linking a spacer group together with a functional group A on the amino propylether side chain.

20. (Amended) Method of producing the 3-amino propylether-25-hydroxy or 3-amino propylether-1 α ,25-dihydroxy vitamin D intermediate compound, characterised by the method steps a) and b) according to claim 14.

24. Reagent kit for the detection of 25-hydroxy- and 1 α ,25-dihydroxy vitamin D metabolites, characterised in that it

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cont. contains a standardized quantity of solid or solution of a vitamin D-derivative which is manufactured in accordance with claim 14.

25. (Amended) Vitamin D-compound of the formula:



Full D2
wherein;

R represents a 25-OH side group of vitamin D, or

Y represents hydrogen or hydroxyl and

X represents a substituted or non-substituted hydrocarbon group of 0.8 to 4.2 nm length, which optionally contains the heteroatoms S, O, N, and P.

26. (Amended) Vitamin D compound according to claim 25, obtained by

a) cyanoethylation of the 3-hydroxy group of a vitamin D starting compound in the presence of potassium hydride and tertiary butanol;

b) addition of lithium hydride and conversion of the 25-hydroxy group into the lithium alcoholate and subsequent reduction of the nitrile group with lithium aluminum hydride; and

c) linking a spacer group together with a functional group A on the amino propylether side chain

wherein in step c) two vitamin D aminopropyl compounds are coupled by means of condensation with a dicarboxylic acid.
